

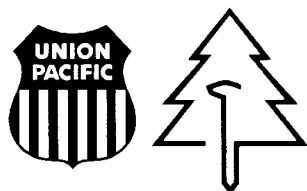
RESPONSE PLAN

U.S. ENVIRONMENTAL PROTECTION AGENCY ADMINISTRATIVE ORDER ON CONSENT

Omaha, Nebraska Shops



Prepared for



ENVIRONMENTAL MANAGEMENT

Union Pacific Railroad Company
Omaha, Nebraska

April 1999

URS Greiner Woodward Clyde

101 South 108th Avenue
Omaha, Nebraska 68154

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R00176479
RCRA RECORDS CENTER

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SECTION ONE

Administrative Order Requirements

The U.S. Environmental Protection Agency Region VII (EPA) has proposed to Union Pacific Railroad Company (UPRR) that it enter an Administrative Order on Consent ("the Order") under Section 3008(h) of the Resource Conservation and Recovery Act (RCRA) for UPRR's Omaha Shops facility ("the Facility"). EPA and UPRR met on January 26, 1999 at the EPA's offices in Kansas City, Kansas and EPA sent UPRR a draft Order on March 23, 1999.

The draft Order for the Omaha Shops includes the following key requirements:

- Perform a RCRA Facility Investigation ("RFI") to determine the nature and extent of any release of hazardous waste or hazardous constituents at or from the Facility
- Perform a Corrective Measures Study ("CMS") to identify and evaluate alternatives for the corrective measures necessary to prevent, mitigate, or remediate any migration or releases of hazardous wastes or hazardous constituents at the Facility

The RFI and CMS activities include numerous specific elements and steps to accomplish their objectives. UPRR has already completed a number of studies and investigations at the Omaha Shops. In many cases, UPRR believes that these previous studies will satisfy some requirements of the Order. Table 1-1 summarizes UPRR's plan for responding to the specific RFI and CMS requirements in the draft Order.

As part of its response to the Order, UPRR proposes that the Facility be divided into two "Operable Units." Operable Unit No. 1 (OU1) would include that portion of the Facility to be purchased by the City of Omaha for development of a new convention center and arena. Operable Unit No. 2 (OU2) would include the balance of the Facility (see Figure 1-1).

OU1 RFI/CMS activities would likely proceed at a more aggressive schedule to meet the City of Omaha's plans for site development. In order to meet the more aggressive schedule, UPRR proposes that some of the RFI/CMS elements be streamlined. OU2, which will probably include SWMUs potentially requiring more active corrective measures (e.g., the Paint Barrel Pits [SWMU 14] and Acetylene Sludge Pits [SWMU 20]) could be addressed under a less aggressive schedule and with a more comprehensive approach absent the time pressures associated with imminent site development.

In January 1996, UPRR applied to participate in the Nebraska Remedial Action Plan Monitoring Act (RAPMA) Program. The RAPMA Program, authorized by the Nebraska Legislature in 1994, allows the Nebraska Department of Environmental Quality (NDEQ) to coordinate and oversee efforts by property owners, prospective buyers, lending institutions, or others wishing to initiate voluntary environmental cleanup activities. As part of the RAPMA Program, UPRR submitted a draft remedial action plan to NDEQ to describe potential development activities for the Omaha Shops facility. The plan described remedial action objectives and activities to be undertaken to redevelop the Omaha Shops facility for commercial use.

UPRR believes that the general corrective action approach described in the draft remedial action plan is appropriate for corrective action that may be required by the Order. In order to meet the City of Omaha's schedule requirements for developing a convention center/arena at the Omaha Shops facility, UPRR proposes to modify the draft remedial action plan and use existing data,

SECTION ONE

Administrative Order Requirements

where feasible, to satisfy the requirements of the Order. This document offers an approach for addressing the requirements of the Order, while attempting to meet the anticipated construction schedule requirements of the City of Omaha.

TABLE 1-1

**PROPOSED RESPONSE TO RCRA CORRECTIVE ACTION PROCESS
OMAHA SHOPS FACILITY
UNION PACIFIC RAILROAD COMPANY**

Task	Proposed Response
RCRA Facility Investigation (RFI)	
Task I: Description of Current Conditions (Current Conditions Report) A. Facility Background B. Nature and Extent of Contamination C. Implementation of Interim Measures	A comprehensive Current Conditions Report will be prepared to meet these requirements. Items (A) and (B) can be satisfied by incorporating data and information from previous studies and investigations completed for the Facility. UPRR proposes that Item (C) not be addressed for OU1 due to the timing of planned site development and the progress already made in developing a remedial action plan for the site. The site would be divided into two operable units, each with its own timetable.
Task II: Pre-Investigation Evaluation of Corrective Measure Technologies (Pre-Investigation Evaluation Report)	UPRR proposes that this item not be addressed for the Facility due to the investigations already completed, timing of planned site development, and the progress already made in developing a remedial action plan for the site.
Task III: RFI Work Plan Requirements	
A. Project Management Plan	UPRR will develop a Project Management Plan for complying with the requirements of the Order.
B. Data Collection Quality Assurance Plan C. Data Management Plan	As part of earlier investigations, UPRR developed a draft Quality Assurance Project Plan (QAPP) to provide specific guidance and quality assurance requirements for activities associated with investigation of the Facility. This plan will be updated and finalized to satisfy the RFI Work Plan Requirements.

TABLE 1-1

**PROPOSED RESPONSE TO RCRA CORRECTIVE ACTION PROCESS
OMAHA SHOPS FACILITY
UNION PACIFIC RAILROAD COMPANY**

Task	Proposed Response
D. Health and Safety Plan	As part of earlier investigations, UPRR developed a Site-Specific Health and Safety Plan (SSHSP). The SSHSP has been updated with each investigation and will continue to be updated and modified to meet the requirements of any future RFI activities.
E. Community Relations Plan	UPRR will develop a Community Relations Plan for complying with the requirements of the Order.
Task IV: Facility Investigation (RFI) A. Environmental Setting B. Source Characterization C. Contamination Characterization D. Potential Receptors	Facility investigation requirements will be satisfied by the information collected during previous and ongoing investigations. Issues regarding potential receptors are discussed in Section 2.0 of this document.
Task V: Investigation Analysis (RFI Report)	
A. Data Analysis	Data from previous investigations have been analyzed as part of those investigations. Data collected during future and ongoing investigations will be analyzed as part of those efforts. UPRR anticipates that separate data analysis efforts will be required for OU1 and OU2. For OU1, RFI information would be presented in the Current Conditions Report.

TABLE 1-1

**PROPOSED RESPONSE TO RCRA CORRECTIVE ACTION PROCESS
OMAHA SHOPS FACILITY
UNION PACIFIC RAILROAD COMPANY**

Task	Proposed Response
B. Protection Standards	Risk-based protection standards will be established for the Facility and will take into account the Facility's proposed use and NDEQ groundwater classification (RAC-3). UPRR completed a Screening-Level Risk Evaluation as part of previous investigations. It is proposed that the Screening-Level Risk Evaluation be updated to establish risk-based protection standards. Additional information regarding basic approach for establishing risk-based standards is included in Section 2.0 of this document.
Task VI: Laboratory and Bench-Scale Studies	UPRR anticipates that no laboratory or bench-scale studies will be required to evaluate corrective measure alternatives for OU1 due to the timing of planned site development and the progress already made in developing a remedial action plan for the site. Laboratory or bench-scale studies may be required for OU2.
Task VII: Reports	Separate reports will be prepared for OU1 and OU2. RFI Reports will focus on whether the remedy proposed continues to achieve EPA's objectives, given the proposed site usage.

TABLE 1-1

**PROPOSED RESPONSE TO RCRA CORRECTIVE ACTION PROCESS
OMAHA SHOPS FACILITY
UNION PACIFIC RAILROAD COMPANY**

Task	Proposed Response
Corrective Measures Study (CMS)	
Task VIII: CMS Work Plan – Identification and Development of the Corrective Measure Alternative or Alternatives	
A. Description of Current Situation (Current Conditions Report Update)	A comprehensive Current Conditions Report will be prepared as part of the initial RFI activities. The report will be updated, as necessary, to meet these requirements.
B. Corrective Action Objectives	Corrective action objectives for the Facility are outlined in Section 2.0 of this document.
C. Initial Screening of Corrective Measure Technologies D. Identification of the Corrective Measure Alternative or Alternatives E. Evaluation of Alternatives	UPRR anticipates that no screening, identification, or evaluation of corrective measure alternatives will be required for OU1 due to the timing of planned site development and the progress already made in developing a remedial action plan for the site. UPRR proposes a focused evaluation of technologies and alternatives for OU2.

TABLE 1-1

**PROPOSED RESPONSE TO RCRA CORRECTIVE ACTION PROCESS
OMAHA SHOPS FACILITY
UNION PACIFIC RAILROAD COMPANY**

Task	Proposed Response
Task IX: Evaluation of the Corrective Measure Alternative or Alternatives A. Technical, Environmental, Human Health, and Institutional Factors B. Cost Estimate	These requirements are generally satisfied for OU1 by the remedial action plan developed for the site, key elements of which are described in Section 3.0 of this document. The remedial action plan will be updated and revised to more directly satisfy these requirements and to reflect the specific development plans for OU1. Corrective measure alternatives for OU2 will be evaluated separately. Corrective measures under way pursuant to NDEQ oversight would be excluded.
Task X: Recommended Corrective Measure or Measures	This requirement is generally satisfied for OU1 by the remedial action plan developed for the site, key elements of which are described in Section 3.0 of this document. The remedial action plan will be updated and revised to more directly satisfy this requirement and to reflect the specific development plans for OU1. Recommended corrective measures for OU2 will be addressed separately.
Task XI: CMS Report	Separate CMS reports will be prepared for OU1 and OU2.

TABLE 1-1

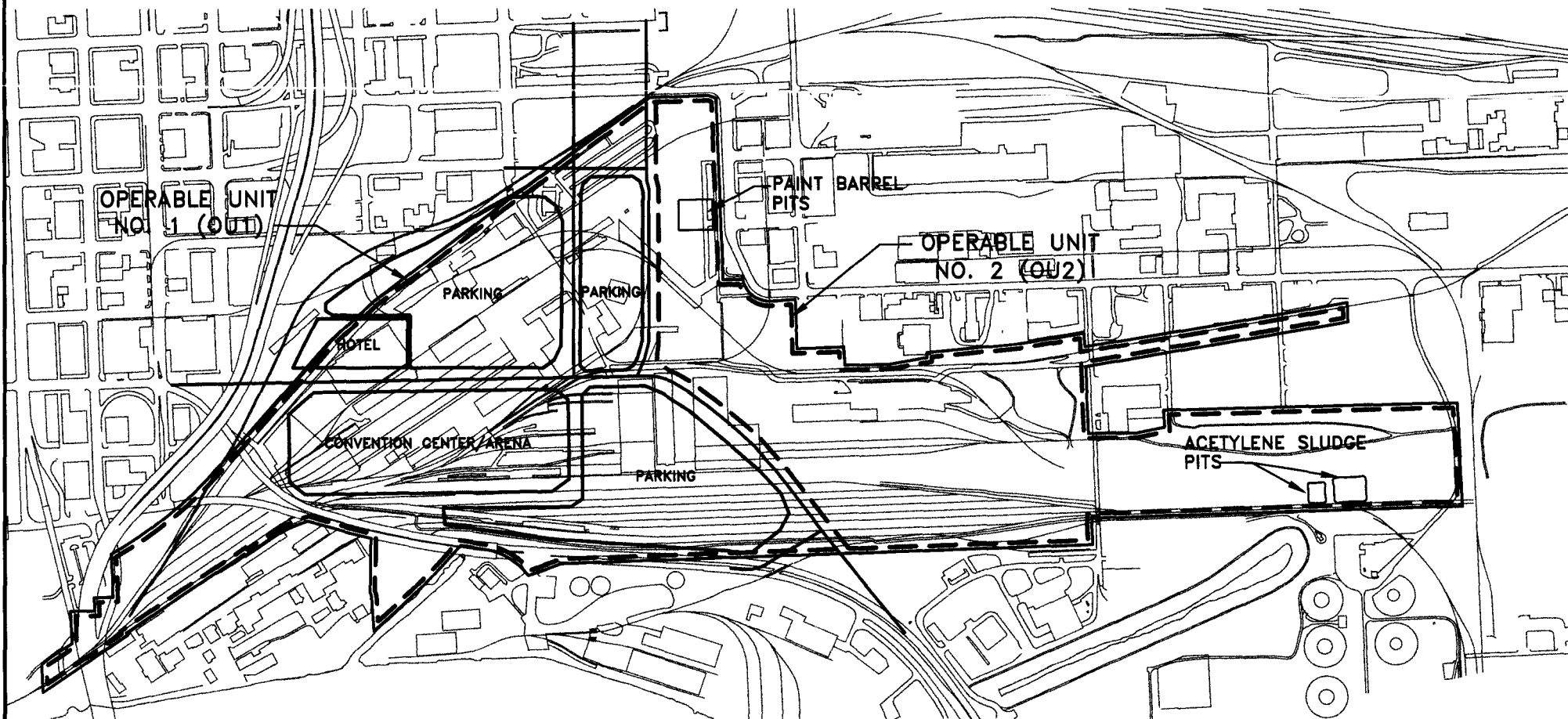
**PROPOSED RESPONSE TO RCRA CORRECTIVE ACTION PROCESS
OMAHA SHOPS FACILITY
UNION PACIFIC RAILROAD COMPANY**

Task	Proposed Response
Corrective Measures Implementation (CMI)	
Task XII: CMI Work Plan	Many of the elements required for the CMI Work Plan are included in the remedial action plan developed previously for the site. The remedial action plan will be updated, expanded, and revised to more directly satisfy this requirement and to reflect the specific development plans for OU1. A separate CMI work plan will be prepared for OU2.
A. Introduction/Purpose	
B. Project Management Plan	
C. Project Schedule	
D. Construction Quality Assurance/Quality Control Plan	
E. Waste Management Procedures	
F. Contingency Procedures	
G. Data Management and Documentation Requirements	
H. Quality Assurance Project Plan/Sampling and Analysis Plan	
I. Health and Safety Plan	

TABLE 1-1

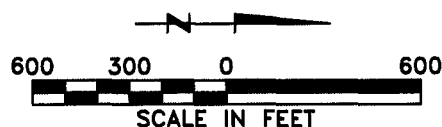
**PROPOSED RESPONSE TO RCRA CORRECTIVE ACTION PROCESS
OMAHA SHOPS FACILITY
UNION PACIFIC RAILROAD COMPANY**

Task	Proposed Response
Task XIII: Operation and Maintenance Plan A. Introduction/Purpose B. Corrective Action Objectives C. Project Management D. System Description E. Personnel Training F. Start-Up Procedures G. Operation and Maintenance Procedures H. Replacement Schedule for Equipment and Installed Components I. Waste Management Practices J. Corrective Measure Completion Criteria K. Contingency Procedures	Separate Operation and Maintenance Plans will be prepared for OU1 and OU2.
Task XIV: Corrective Measures Implementation Report	Separate CMI Reports will be prepared for OU1 and OU2.
Task XV: Corrective Measures Completion Report	Separate Corrective Measures Completion Reports will be prepared for OU1 and OU2.
Task XVI: Quarterly Progress Reports	Quarterly Progress Reports will be submitted to comply with this requirement.



LEGEND

- PROPERTY LINE
- RAIL LINE (RELOCATED)
- NEW ROADWAY
- CONVENTION CENTER, HOTEL, AND PARKING AREAS
- - - - - OPERABLE UNIT



PROPOSED OPERABLE UNITS



OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY



URS Greiner Woodward Clyde

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The proposed corrective action objectives for the Omaha Shops facility will focus on the exposure settings for which protection will be provided. Exposure settings will take into consideration the contaminated media, chemicals of concern, and exposure pathways. Consideration of exposure pathways is important, since protection may be achieved by reducing the likelihood of exposure and by reducing contamination levels. Corrective action objectives will provide long-term targets to use during development, evaluation, and selection of corrective action alternatives. Risk-based corrective action objectives will be developed by identifying and defining media of concern, chemicals of concern, present and future land use, exposure pathways, and target risk levels.

2.1 MEDIA OF CONCERN

EPA's Risk Assessment Guidance for Superfund (EPA 1991) states that it is generally appropriate to evaluate contaminants in those media where the cumulative current or future excess cancer risk is greater than 1×10^{-4} or the hazard index (HI) is greater than one. A site-specific decision regarding further corrective action should be made when the cumulative current or future excess cancer risk for a medium falls within the range of 1×10^{-6} to 1×10^{-4} .

NDEQ regulations, Title 118 - Ground Water Quality Standards and Use Classification, establish numerical standards (maximum contaminant levels) for many of the contaminants found in groundwater at the Omaha Shops site. Title 118 maximum contaminant levels (MCLs) are generally consistent with MCLs established by EPA in the National Primary Drinking Water Regulations (40 CFR Part 141) and the National Secondary Drinking Water Regulations (40 CFR Part 143). Title 118 gives the NDEQ the authority to define a remedial action classification (RAC) for groundwater based upon information obtained in the investigative assessment. The RAC designation determines the level of corrective action required for groundwater and is assigned by the NDEQ on a case by case basis.

The NDEQ has determined that the groundwater at the Omaha Shops facility is a RAC-3. The RAC-3 determination was made under NDEQ Stipulated Order Number 1468. As a RAC-3 designated facility, corrective action requirements consist of recovering readily removable contaminants (free product) with associated groundwater monitoring. Therefore, no action levels are proposed, and groundwater is not proposed to be remediated in anticipation of development. The oil recovery system installed as part of the Stipulated Order to recover free-phase diesel will continue to operate until free product recovery is complete.

The results of previous investigations and the screening level risk assessment indicate that soil in some areas of the Omaha Shops facility poses a potential excess cancer risk greater than 1×10^{-6} or a potential noncarcinogenic HI in excess of 1. Therefore, UPRR proposes that soil be the only media of concern to be considered at the Omaha Shops facility.

2.2 CHEMICALS OF CONCERN

EPA guidance (EPA 1991) recommends that a chemical in a medium that has an associated risk (i.e., current or future excess cancer risk greater than 1×10^{-6} or HI greater than 1) should be retained as a chemical of potential concern for that medium. Likewise, chemicals with associated cancer risks of less than 1×10^{-6} or HI less than 1 should not be retained as chemicals of concern unless there are significant concerns about multiple contaminants and pathways.

The screening level risk evaluation for the Omaha Shops facility will be updated. Chemicals that pose a potential excess cancer risk greater than 1×10^{-6} or HI greater than one will be retained as potential chemicals of concern.

2.3 PRESENT AND FUTURE LAND USE AND GROUNDWATER USE

The Omaha Shops facility is located in an area that is predominantly industrial in nature, with a few commercial areas. Currently, groundwater beneath the Facility is not used as a drinking water supply. The Douglas County Health Department's current policy is to not allow any new drinking water supply wells within the Metropolitan Utilities District service area. Special use industrial wells (e.g., closed systems, heat pumps, etc.) may be allowed on a case-by-case basis. Therefore, domestic and industrial groundwater use is not expected to occur in the future.

Future land use at the Omaha Shops facility and the surrounding area is expected to remain industrial and commercial indefinitely. The City of Omaha's plans to develop a portion of the Omaha Shops facility as a convention center/arena is consistent with these planned future land uses. This would be taken into account in evaluating corrective measures and determining what additional information, if any, is required as part of the RFI.

2.4 EXPOSURE PATHWAYS

The exposure pathways at the Omaha Shops facility that will be considered in developing risk-based action levels for soil and groundwater include the following:

- **Soil:** Potential future receptors to site-related chemicals in soil are recreational users, occupational workers, and construction workers. The routes by which they may be exposed and which were considered in developing risk-based action levels for soil are:
 - Ingestion of soil
 - Inhalation of volatile chemicals and chemicals bound to airborne particulates emitted from soil
 - Dermal contact with soil
- **Groundwater:** Construction workers are the only potential future receptors to site-related chemicals in groundwater at the Omaha Shops facility. The routes by which they may be exposed and which will be considered in developing risk-based action levels for groundwater are:

- Ingestion of water
- Inhalation of volatile chemicals from groundwater
- Dermal contact with groundwater

2.5 TARGET RISK LEVELS

For carcinogenic health effects, action levels will be developed that correspond to a risk range of 1×10^{-6} to 1×10^{-4} of an individual developing cancer over a lifetime as a result of exposure to the potential carcinogens from all significant exposure pathways for a given medium. A lifetime excess cancer risk range of 1×10^{-6} to 1×10^{-4} is the EPA acceptable risk range that is to be used when making corrective action selection decisions under CERCLA (EPA 1991).

For noncarcinogenic health effects, action levels will be developed that correspond to a HI of one. A total HI equal to one indicates that no adverse noncarcinogenic effects are expected to occur to sensitive individuals over a lifetime of exposure. An HI equal to one will be used as the target risk for developing action levels for the Omaha Shops facility.

2.6 ACTION LEVELS

Risk-based action levels represent proposed levels that would reduce estimated potential health risks caused by exposure to soil and groundwater to the following levels:

- Between 1×10^{-6} and 1×10^{-4} for carcinogenic risks
- An HI less than or equal to 1 for noncarcinogenic risks

The following discussion summarizes proposed risk-based action levels for the chemicals of concern at the Omaha Shops facility.

2.6.1 Carcinogens

UPRR proposes using risk-based action levels or risk-based concentrations (RBCs) for carcinogenic chemicals that are within EPA's target risk range of 1×10^{-6} to 1×10^{-4} for carcinogens. A specific action level will be established for each carcinogenic chemical of concern.

2.6.2 Noncarcinogens

UPRR proposes using a HI of one to establish action levels for noncarcinogenic chemicals. A specific action level will be established for each noncarcinogenic chemical of concern.

2.6.3 Lead

EPA has issued guidance on assessing lead exposure and risk from industrial and commercial land use where only adults are exposed. For lack of a better approach, many agencies have used the upper end of the 500 to 1,000 mg/kg cleanup range (specified in EPA's 1989 guidance for lead at residential sites where children are exposed) to establish cleanup levels for industrial and commercial sites where only adults are exposed. This cleanup level range is not health-based for adult exposure because it was developed based on blood lead levels in children, who have much higher soil ingestion rates, lead uptake rates, and resultant blood lead levels than similarly exposed adults.

EPA's Technical Review Workgroup for Lead (TRW) has developed interim guidance for assessing lead risks and establishing cleanup goals that will protect adults and fetuses from lead in soil (EPA 1995). The guidance does not provide a specific target soil lead cleanup level, but proposes a methodology which allows for the input of either site-specific data or recommended default values to assess risk and develop site-specific cleanup goals. The methodology is conservative (health-protective) because it is designed to protect developing fetuses, who may be more sensitive to the effects of lead than are adults.

UPRR proposes to use the TRW methodology to establish an action level for lead in soil at the Omaha Shops. The methodology assumes a commercial (occupational) worker scenario for adults, potentially including pregnant women. Because adults may be less sensitive than fetuses to the effects of lead in blood, the action level is likely overly protective of adult commercial workers. Using this methodology, a preliminary action level of 2,725 mg/kg was derived for the site.

2.6.4 Petroleum Hydrocarbons

Neither Nebraska nor federal regulations specify acceptable concentrations of petroleum hydrocarbon contamination in soil. The NDEQ evaluates sites on a case-by-case basis and defines clean soils as having less than detectable petroleum hydrocarbon concentrations. Recent projects in the vicinity of the Omaha Shops have encountered petroleum hydrocarbon soil contamination resulting from leaking underground storage tank systems. An action level of 1,000 mg/kg petroleum hydrocarbons in the soil was used in 1989 at the Omaha Riverfront Development Project. In this case, soil with petroleum hydrocarbon levels exceeding 1,000 mg/kg were excavated and either landfarmed on site or disposed of in a sanitary landfill. Considering the similarities of the geology and land use at the Riverfront Development Project site and the Omaha Shops, it is reasonable to expect that a similar action level would be applied at the Omaha Shops. Therefore, 1,000 mg/kg is proposed as the action level for petroleum hydrocarbons in soil.

Legislative Bill (LB) 1266, passed by the Nebraska Legislature and signed into law in April 1996, directs the NDEQ "to consider the risk to human health and safety and to the environment in evaluating and approving plans for remedial action". Furthermore, LB 1226 requires that, for petroleum releases, "the plan for remedial action shall take into account risk-based corrective action assessment principles which identify the risks presented to the public health and safety or

the environment by each release in a manner that will protect the public health and safety and the environment using, to the extent appropriate, a tiered approach consistent with the American Society for Testing and Materials standards".

In response to this legislative directive, the NDEQ is developing guidance for applying risk assessment methodologies to determine appropriate corrective actions for petroleum hydrocarbon releases. This guidance, when it becomes available, will be applied to the Omaha Shops site to establish a risk-based corrective action level for petroleum hydrocarbons in soil. The currently proposed action level of 1,000 mg/kg will be revised if the NDEQ risk-based guidance is published prior to initiating corrective action at the Omaha Shops.

2.6.5 Asbestos

The asbestos standard (OSHA 1926.1101) defines asbestos-containing material (ACM) as any material containing more than 1 percent asbestos. The proposed action level for asbestos in soil at the Omaha Shops is 1 percent.

2.7 CORRECTIVE ACTION OBJECTIVES

The proposed corrective action objectives focus on the exposure settings for which protection will be provided. Exposure settings take into consideration the chemicals of concern, contaminated media, and exposure pathways. The consideration of exposure pathways is important, since protection may be achieved by reducing the likelihood of exposure and by reducing contamination levels.

Four exposure settings are identified as posing potential health risks at the Omaha Shops. These exposure settings include the following:

- Recreational user, occupational user, and construction worker exposure settings involving direct contact with, inhalation of, and ingestion of contaminated soil.
- Direct contact with, inhalation of, and ingestion of contaminated groundwater by construction workers.

Three corrective action objectives are proposed for the Omaha Shops based on existing knowledge of the site and potential risks posed by the site:

- Reduce the probability and degree of exposures to chemicals of concern in the soil and groundwater to levels that are considered protective of human health and the environment.
- Contain free-phase diesel in groundwater and prevent migration of free phase diesel into future belowground structures.
- Reduce the levels of contaminants from construction dewatering activities to levels that will allow discharge to the City of Omaha sanitary sewer system, if dewatering is required.

3.1 CONSTRUCTION ACTIVITIES

Construction activities for development of a convention center/arena at the Omaha Shops facility are not yet completely defined. The proposed actions described below have been developed to address the issues reasonably expected to be involved in development at the Omaha Shops facility. While the specific details of site development for the convention center/arena project are not available at this time, the activities described below are intended to be generic in nature and would be expected to apply to reasonably anticipated development proposals for the Omaha Shops facility. Details regarding implementation of corrective actions will be included in the CMS report. The following proposed actions would be undertaken during development construction activities.

3.2 EXCAVATED SOIL MANAGEMENT

The corrective action objectives described in Section 2.7 focus on four exposure settings. The following three exposure settings involve direct contact with, inhalation of, and ingestion of contaminated soil:

- Recreational users
- Occupational users
- Construction workers.

This section describes actions to reduce the probability and degree of exposures to chemicals of concern in the soil to levels that are protective of human health and the environment.

3.2.1 Elevated Constituent Locations

Specific locations of elevated constituents will be identified in the CMS report based on the presence of contaminants in soil above established risk-based corrective action levels.

3.2.2 Soil Excavation and Placement

Soil exceeding risk-based corrective action levels will be managed in the following manner:

- Soil that will not be disturbed by construction will be covered with a minimum of 1 foot of clean soil. Prior to placement of clean soil, soil samples will be collected and analyzed to document chemical concentrations in soil to be left in place. Surface completion may consist of pavement or vegetative cover.
- Soil disturbed by construction will be placed in an area of the property designated as a repository for soils containing chemicals above action levels. Following excavation of soils exceeding action levels, soil samples will be collected and analyzed to document chemical concentrations in the remaining soil. If soil exceeding action levels remains, it will be covered with a minimum of 1 foot of clean soil.
- Soil samples will also be collected from the excavated soil to document chemical concentrations in soil to be placed in the on-site repository. Soil placed in the on-site

SECTION THREE

Site Development

repository will be covered with a minimum of 1 foot of clean soil. Surface completion in the on-site repository area may consist of pavement or vegetative cover.

Soil with petroleum hydrocarbon concentrations exceeding the action level (1,000 mg/kg) will be managed in the following manner:

- Soil that will not be disturbed by construction will be covered with a minimum of 1 foot of clean soil. Prior to placement of clean soil, soil samples will be collected and analyzed to document petroleum hydrocarbon concentrations in soil to be left in place. Surface completion may consist of pavement or vegetative cover.
- Soil disturbed by construction will be transported to an area of the property designated as a treatment unit for soil containing petroleum hydrocarbons above action levels. Following excavation of soil exceeding action levels, soil samples will be collected and analyzed to document petroleum hydrocarbon concentrations in the remaining soil. If soil exceeding action levels for petroleum hydrocarbons remain, they will be covered with a minimum of 1 foot of clean soil.
- Soil samples will also be collected from the excavated soil to document petroleum hydrocarbon concentrations in soil to be placed in the on-site treatment unit. Soil placed in the on-site treatment unit will be treated until the petroleum hydrocarbon concentration is below action levels. Following treatment, the soil may be used as fill in other areas of the site.
- Depending on specific site development plans, passive or active barrier systems may be evaluated to prevent the migration of petroleum hydrocarbon vapors into basements, sewers, or other structures planned for the Omaha Shops. These types of systems will be described in the detailed construction documents for site development.

Soil with asbestos levels exceeding the action level (1 percent) will be managed in the following manner:

- Soil that will not be disturbed by construction will be covered with a minimum of 1 foot of clean soil. Prior to placement of clean soil, soil samples will be collected and analyzed to document asbestos levels in soil to be left in place. Surface completion may consist of pavement or vegetative cover.
- Soil disturbed by construction will be placed in an area of the property designated as a repository for soil containing asbestos above action levels. Following excavation of soil exceeding action levels, soil samples will be collected and analyzed to document asbestos levels in the remaining soil. If soil exceeding action levels for asbestos remain, they will be covered with a minimum of 1 foot of clean soil.
- Soil samples will also be collected from the excavated soil to document asbestos levels in soil to be placed in the on-site repository. Soil placed in the on-site repository will be covered with a minimum of 1 foot of clean soil. Surface completion in the on-site repository area may consist of pavement or vegetative cover.

3.2.3 Fugitive Dust Control

Dust control measures will be employed to minimize the generation and dispersion of dust containing chemicals of concern during construction. The construction documents will require that the contractor use water or other wetting agents to control dust. The construction documents will allow suspension of construction activities if the contractor fails to maintain effective dust control.

3.2.4 Confirmation Sampling

Soil samples will be collected during construction for the following purposes:

- To document chemical of concern concentrations in soil to be left in place
- To document chemical of concern concentrations in soil excavated during construction and placed in on-site repositories or treatment units.

Samples to document chemical of concern concentrations in soil to be left in place will be collected at locations and frequencies depending on the area to be sampled. For large open areas, samples will be collected based on a horizontal sampling grid. The spacing of the horizontal sampling grid will be 100 feet by 100 feet, with one area composite sample to be collected from each grid block. This rationale effectively results in one sample being collected for every 10,000 square feet of area. For linear areas, such as utility corridors, roadways, etc., samples will be collected at approximately the same frequency; i.e., one sample for every 10,000 square feet. Samples to document chemical of concern concentrations in soil to be placed in on-site repositories or treatment units will be collected at a frequency of one composite sample for every 1,000 cubic yards of soil excavated.

3.3 AIR MONITORING

Air monitoring will be required to demonstrate the effectiveness of contractor dust control efforts. High volume air samplers will be installed at the site to collect samples for particulate and other selected chemical of concern analysis. The prevailing wind direction for the site during a typical construction season is from the south-southeast. One monitoring station will be located near the southern boundary of the site and will serve as the background air monitoring station. Other monitoring stations will be located along the northern perimeter of the Omaha Shops and would serve as downwind monitoring stations for the site development construction activities. Monitoring station locations will be selected based on actual site development plans. Background samples will be collected at each monitoring station prior to beginning construction activities.

Air monitoring sampling frequency, equipment, and procedures will be detailed in a Sampling and Analysis Plan (SAP).

3.4 FUEL RECOVERY SYSTEM

3.4.1 Existing System

The existing fuel recovery system is located under the Abbott Drive viaduct, southeast of the former locomotive fueling and servicing area. The system was installed in 1988, pursuant to a stipulated agreement with NDEQ, and is designed to recover free-phase diesel fuel from the groundwater surface. A series of 13 recovery wells, fitted with pneumatic pumps, transfers diesel and groundwater to an oil/water separator. The separated diesel is stored until it is periodically retrieved by an oil recycling contractor. Treated groundwater is discharged to the City of Omaha sanitary sewer system. Information and data generated for operation of the fuel recovery system are reported to NDEQ on a quarterly basis (USPCI/Laidlaw 1996). UPRR proposes to exclude this system from the Order and continue operating the system under NDEQ oversight.

3.4.2 System Modifications

The fuel recovery system may be modified to enhance recovery operations. Depending on specific site development plans, system modifications may be required to prevent the migration of free-phase diesel into basements, sewers, or other structures planned for the Omaha Shops. System modifications, if required, will be described in the CMS report.

3.5 CONSTRUCTION DEWATERING

Dewatering may be required for construction of subsurface structures below the water table at the Omaha Shops facility. The main purpose of dewatering will be to enable construction to be carried out under relatively dry conditions. Preliminary plans suggest that the convention center/arena would be constructed on a pile foundation with a structural floor and no basement. This type of construction would significantly reduce the amount of dewatering that may be required.

3.5.1 Dewatering Methods

Dewatering for construction of subsurface structures below the water table will be accomplished using standard construction dewatering methods such as well points or deep wells. The following two dewatering environments are present at the Omaha Shops facility:

- In the southern and western parts of the Omaha Shops facility, the natural soils beneath the surface fill generally consist of thick deposits of highly plastic clay underlain by rock. For dewatering purposes, these conditions are not expected to produce large quantities of water during construction.
- At the eastern and northern end of the Facility, the natural soils generally consist of a thin discontinuous layer of soft to medium clay underlain by medium dense to dense alluvial sands. For dewatering purposes, these conditions are expected to produce relatively large quantities of water during construction.

Construction dewatering may be required in either of the above conditions. Dewatering methods will be selected based on the specific site development plans. Dewatering requirements will be described in the CMS report and in the detailed construction documents for site development.

3.5.2 Testing, Handling, and Disposal of Extracted Groundwater

Groundwater produced from dewatering activities will be discharged to the City of Omaha's sanitary sewer system. Pretreatment may be required prior to discharging groundwater from dewatering activities. If construction dewatering is planned in the area where free-phase diesel is present in the groundwater, pretreatment operations similar to those currently employed for the diesel fuel recovery system at the site will be required. Currently, an oil/water separator is used to separate diesel from the pumped groundwater. The separated diesel is stored until it is periodically retrieved by an oil recycling contractor, and treated groundwater is discharged to the City of Omaha sanitary sewer system.

Groundwater from dewatering activities in other areas of the Omaha Shops facility are not expected to require treatment prior to discharge to the sanitary sewer. Details of the pretreatment system for groundwater produced by construction dewatering will depend on the specific site development plans. Groundwater quality will be evaluated as part of the predesign activities for site development and the City of Omaha Public Works Department will be consulted for approval to discharge to the sanitary sewer system. Pretreatment requirements for extracted groundwater will be described in the CMS report and in the detailed construction documents for site development.

3.6 DEED RESTRICTIONS / ACCESS CONTROL

Deed restrictions for the Omaha Shops facility would restrict or prohibit future land uses, particularly those that would involve intrusive activities. Controlled activities will include construction, infrastructure development, and groundwater supply well development. It is assumed that the property would be owned and managed by the City of Omaha or some other public entity. As a result, deed restrictions on the Omaha Shops facility, would be less likely to be subject to changes in political jurisdiction, legal interpretation, and regulatory enforcement. Deed restrictions will provide protection against direct contact with contaminants.

The City of Omaha or some other public entity will control public access to the site. Property management personnel will have access to the property, but no direct exposure pathway to contaminants in the soil or groundwater will exist following development of the property. Exposure to contaminants through periodic intrusive activities for utilities construction, landscaping, etc., will be controlled through implementation of a long-term site management plan that will be developed by UPRR and implemented by the City of Omaha.

3.7 HEALTH AND SAFETY**3.7.1 Construction Activities Health and Safety Plan**

A site-specific health and safety plan (HSP) will be developed to govern construction activities at the Omaha Shops facility. The plan will provide site background information and will describe health and safety procedures and protocols, decontamination procedures, personnel training, and medical surveillance requirements for anticipated on-site activities. The plan will identify expected hazards or problems which may be encountered and will describe how these will be addressed. The HSP will specify action levels for the various hazardous substances expected to be encountered at the site. Procedures for protecting third parties, such as visitors and noncontractor employees, will also be included. The HSP will also address applicable UPRR safety requirements for contractors.

Occupational Safety and Health Administration (OSHA) Standards for activities at hazardous waste sites (29 CFR 1910.120) are not expected to be applicable to general construction activities at the Omaha Shops site; however, some activities will require special provisions to protect worker health and safety. These activities include the following:

- Earthwork which includes handling materials containing chemicals of concern
- Dewatering activities in areas with free phase diesel fuel in groundwater

Each of these activities will be described in detail in the construction activities HSP. Issues related to these activities are discussed in this section.

3.7.2 Lead Standard

The lead standard (OSHA 1926.62) applies to "all construction work where an employee may be occupationally exposed to lead." Construction work is defined as work for construction, alteration and/or repair, including demolition or salvage of structures where lead or materials containing lead are present. Due to the presence of lead in the soil at the Omaha Shops facility, it is reasonable to expect that construction workers could be exposed to fugitive dust containing lead. Based on the potential for construction workers' exposure to materials containing lead, the lead standard will apply to the Omaha Shops facility.

The regulations [1926.62(c)] require that the employer assure that no employee is exposed to lead at concentrations greater than the permissible exposure limit (PEL) of 50 micrograms of lead per cubic meter of air ($50 \mu\text{g}/\text{m}^3$) averaged over an 8-hour period. Specific actions to be taken by the employer to provide this assurance, including exposure assessment and employee protection, are described in the regulations.

An exposure assessment [1926.62(d)(1)] will be completed during the initial phases of site development to determine if any employee may be exposed to lead at or above the action level, which is $30 \mu\text{g}/\text{m}^3$ calculated as an 8-hour time-weighted average. This initial determination will be completed by collecting personal samples representative of a full shift, including at least one sample for each job classification in each work area.

Construction workers will be protected during the initial exposure assessment as provided for in OSHA 1926.62(d)(2). Until the initial exposure assessment is completed and it has been documented that construction workers are not exposed above the PEL of 50 $\mu\text{g}/\text{m}^3$, the construction workers will be treated as if they were exposed above the PEL and worker protective measures will be employed. Applicable worker protective measures will include the following [1926.62(d)(2)(v)]:

- Appropriate respiratory protection
- Appropriate personal protective clothing and equipment
- Change areas
- Hand washing facilities
- Training

If the initial determination shows the possibility of any exposure level at or above the action level (30 $\mu\text{g}/\text{m}^3$), the contractor will be required to conduct monitoring which is representative of the exposure for each employee in the workplace who is exposed to lead [1926.62(d)(4)]. Specific monitoring requirements are outlined in 1926.62(d)(6). Appropriate respiratory protection or engineering controls and accompanying compliance methods must also be implemented as described in 1926.62(e) if exposures exceed the PEL.

If the initial determination shows that no employee is exposed above the action level, a written record of the determination will be made, including the specific information described in the regulations [1926.62(d)(5)]. Further exposure determination will not be repeated unless there is a change of equipment, process, control, personnel, or a new task is initiated that may result in additional lead exposures above the PEL [1926.62(d)(7)].

The site development earthwork contract documents will include provisions for contractor compliance with lead standard requirements, including an initial exposure assessment. Initial exposure assessment procedures and other lead standard requirements will be detailed in the construction activities HSP.

3.7.3 Asbestos Standard

The asbestos standard (OSHA 1926.1101) applies to construction work where employees have the potential to be exposed to asbestos. Due to the presence of asbestos in the soil at the Omaha Shops, it is reasonable to expect that construction workers could be exposed to asbestos fibers. Based on the potential for construction workers' exposure to asbestos, the asbestos standard will apply to the Omaha Shops facility [1926.1101(a)(5) and 1926.1101(a)(6)].

The construction activities anticipated at the Omaha Shops would be defined as Class IV asbestos work [1926.1101(b)]. The regulations require that workers performing Class IV operations receive training equivalent in curriculum and training method to the awareness training course developed by EPA for maintenance and custodial workers who work in buildings containing asbestos-containing material [1926.1101(k)(8)(v)]. Employers are required to assure that no employee is exposed to airborne concentrations of asbestos over the PEL of 0.2 fiber per

cubic centimeter (f/cc) of air as an 8-hour time-weighted average (TWA) and the excursion limit of 1.0 f/cc of air as averaged over a sampling period of 30 minutes [1926.1101(c)(2)].

An exposure assessment will be completed during the initial phases of site development to determine if any workers may be exposed to asbestos at or above the action level, which is 0.1 f/cc as an 8-hour TWA. This initial determination will be completed by collecting representative personal samples. Construction workers will be protected during the initial exposure assessment. Until the initial exposure assessment is completed and it has been documented that construction workers are not exposed above the PEL, the construction workers will be treated as if they were exposed above the PEL and worker protective measures will be employed. Applicable worker protective measures will include the following:

- Appropriate respiratory protection
- Appropriate personal protective clothing and equipment
- Change areas
- Hand washing facilities
- Training

If the initial determination shows the possibility of any exposure level at or above the action level, the contractor will be required to conduct activities as required for regulated areas. For this work, a regulated area is an area where operations cause airborne concentrations of asbestos to exceed the PEL, or there is a reasonable possibility that operations may cause airborne concentrations to exceed the PEL [1926.1101(e)(1)].

If the initial determination shows that no workers are exposed above the action level, a written record of the determination will be made. Further exposure determination will not be repeated unless there is a change of equipment, process, control, personnel, or a new task is initiated that may result in additional asbestos exposures above the PEL.

The site development earthwork contract documents will include provisions for contractor compliance with asbestos standard requirements, including an initial exposure assessment. Initial exposure assessment procedures and other asbestos standard requirements will be detailed in the construction activities HSP.

3.8 SAMPLING AND ANALYSIS PLAN

A Sampling and Analysis Plan (SAP) will be prepared as part of the Construction Quality Assurance Plan (CQAP) to provide specific details regarding data collection activities to support implementation of this corrective action plan. Activities to be addressed in the plan will include soil sampling, water sampling, and air sampling. The SAP will describe rationale for selecting sampling methods and techniques. The SAP will also detail sampling objectives; necessary equipment; sample types, location, and frequency; and analyses of interest. The SAP will include a quality assurance discussion that addresses the following elements:

- Quality assurance objectives for data, such as the required precision and accuracy, data completeness, representativeness of data, comparability of data, and the intended use of collected data
- Sample custody procedures
- Specific procedures to assess data precision, representativeness, comparability, accuracy, and completeness
- Data documentation and tracking procedures
- Standard Operating Procedures (SOPs) for field sampling activities

3.9 CONSTRUCTION QUALITY ASSURANCE

UPRR will observe and document contractor activities for implementation of this corrective action plan. A detailed construction quality assurance plan (CQAP) will be developed as part of the site development plan. The CQAP will address the following construction phase issues:

- Communication
- Surveying
- Documentation
- Reporting
- Sampling and Analysis Plan

3.10 LONG-TERM MAINTENANCE PLAN

A long-term maintenance plan will be developed to ensure that soils containing chemicals of concern exceeding action levels continue to be appropriately managed. The long-term maintenance plan will address administrative issues, inspection, maintenance, repair, and monitoring. Details regarding the long-term monitoring plan will be included in the CMS report. The plan will be developed by UPRR and implemented by the City of Omaha.

SECTION FOUR

References

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